National Climatic Data Center

DATA DOCUMENTATION

FOR

DATSAV3 SURFACE

TD-9955

March 17, 1999

National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801-5001 USA

Table of Contents

1.   **Data Set ID:**

   9955

2.   **Data Set Name:**

   DATSAV3 SURFACE, GLOBAL SURFACE HOURLY DATA

3.   **Data Set Aliases:**

   DATSAV3

4.   **Access Method and Sort for Archived Data:**

Surface Observation files consist of observational datasets. Observational databases will be stored in ASCII files. Data item definitions for items transmitted are provided at the end of this preface, providing definition of data items, position number for mandatory data items, field lengths for variable data items, minimum/maximum values of transmitted data, and values for missing data items.

Data Sequence - Data will be sequenced using the following data item order:

   1. FIXED-WEATHER-STATION identifier
   2. GEOPHYSICAL-POINT-OBSERVATION date
   3. GEOPHYSICAL-POINT-OBSERVATION time
   4. GEOPHYSICAL-POINT-OBSERVATION latitude coordinate
   5. GEOPHYSICAL-POINT-OBSERVATION longitude coordinate
   6. GEOPHYSICAL-POINT-OBSERVATION type surface report code
   7. GEOPHYSICAL-REPORT-TYPE code

Record Structure - Each record is of variable length and is comprised of a control and mandatory data section and may also contain additional, remarks and reject data sections.

Maximum record size: 2,838 characters

Maximum block length: 8,192 characters

Control Data Section - The beginning of each record provides information about the report including date, time, and station location information. Data items will use positions identified in the applicable data item definition. The control data section is fixed length and is 54 characters long.

Mandatory Data Section - The mandatory data section contains meteorological information on the basic elements such as winds, visibility, and temperature. These are the most commonly reported parameters and are available most of the time. The mandatory data section is fixed length and is 45 characters long.

Additional Data Section - Variable data is provided after the mandatory data. This additional data contains information of significance and/or which are received with a high degree of frequency. Identifiers are used to note when data is present in the record. If all data items in a group are missing, the entire group is not reported. If no groups are reported the section will be omitted. The additional data section is variable in length with a minimum of 0 characters and a maximum of 637 (634 characters plus a 3 character section identifier) characters.

Note: Specific information (where applicable) pertaining to each variable group of data elements is provided in the data item definition

Remarks Data Items - The non-decodable (remarks) data items are provided if they exist. Data items will vary in length and are identified in the applicable data item definition. The remarks section has a maximum length of 515 (512 characters plus a 3 character section identifier) characters.

Element Quality Data Section - The element quality data section contains information on data that has been determined bad or suspect during quality control procedures. This section is variable in length and contains 16 characters for each erroneous or suspect parameter. The section has a minimum length of 0 characters and a maximum length of 1587 (1584 plus a 3 character section identifier) characters.

Missing Values - Missing values for any non-signed item is filled (i.e., 999). Missing values for any signed item is positive filled (i.e., +99999).

Longitude and Latitude Coordinates - Longitudes will be reported with negative values representing longitudes west of 0 degrees, and latitudes will be negative south of the equator.

5.   **Access Method and Sort for Supplied Data:**

6.   **Element Names and Definitions:**

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****************************************************************************
                        Control Data Section
****************************************************************************
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POS: 1-4   TOTAL-VARIABLE-CHARACTERS - The number of characters in the variable data section.

DOM: A general domain comprised of the characters in the ASCII character set.

MIN: 0000
MAX: 9999

NOTE: (assume this includes remarks add data, remarks etc)

POS: 5-10   FIXED-WEATHER-STATION identifier - The identifier that represents a FIXED-WEATHER-STATION.

MIN: 000000
MAX: 999999

DOM: A general domain comprised of the numeric characters (0-9).

COMMENT: This field includes all surface reporting stations, including ships, buoys, etc.

POS: 11-18   GEOPHYSICAL-POINT-OBSERVATION date - The date of a GEOPHYSICAL-POINT-OBSERVATION.

MIN: 00000101
MAX: 99991231

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DOM: A general domain comprised of integer values 0-9 in the format YYYYMMDD. YYYY can be any positive integer value; MM is restricted to values 01-12; and DD is restricted to values 01-31.

POS: 19-22   GEOPHYSICAL-POINT-OBSERVATION time - The time of a GEOPHYSICAL-POINT-OBSERVATION based on Coordinated Universal Time Code (UTC).

MIN: 0000
MAX: 2359

DOM: A general domain comprised of integer values 0-9 in the format HHMM. HH is restricted to values 00-23; MM is restricted to values 00-59.

POS: 23-28   GEOPHYSICAL-POINT-OBSERVATION latitude coordinate – The latitude coordinate of a GEOPHYSICAL-POINT-OBSERVATION where southern hemisphere is negative.

MIN: -90000
MAX: +90000
UNITS: Degrees
SCALING FACTOR: 1000

DOM: A general domain comprised of the numeric characters (0-9), a plus sign(+), and a minus sign(-). Missing = +99999

POS: 29-35   GEOPHYSICAL-POINT-OBSERVATION longitude coordinate – The longitude coordinate of a GEOPHYSICAL-POINT-OBSERVATION where values west from 000000 to 179999 are signed negative.

MIN: -179999
MAX: +180000
UNITS: Degrees
SCALING FACTOR: 1000

DOM: A general domain comprised of the numeric characters (0-9), a plus sign(+), and a minus sign(-). Missing = +999999

POS: 36-40   GEOPHYSICAL-REPORT-TYPE code - The code that denotes the type of geophysical surface observation.

DOM: A specific domain comprised of the characters in the ASCII character set.

FM-12 = SYNOP Report of surface observation form a fixed land station
FM-13 = SHIP Report of surface observation from a sea station
FM-14 = SYNOP MOBIL Report of surface observation from a mobile land station
FM-15 = METAR Aviation routine weather report
FM-16 = SPECI Aviation selected special weather report
FM-18 = BUOY Report of a buoy observation
SAO   = Airways report (includes record specials)
SAOSP = Airways special report (excluding record specials)
AERO = Aerological report
AUTO = Report from an automatic station

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                    SY-AE = Synoptic and aero merged report
                    SY-SA = Synoptic and airways merged report
                    SY-MT = Synoptic and metar merged report
                    SY-AU = Synoptic and auto merged report
                    SA-AU = Airways and auto merged report
                    S-S-A = Synoptic, airways and auto merged report
                    BOGUS = Bogus report
                    SMARS = Supplementary airways station report

POS:  41-45        GEOPHYSICAL-POINT-OBSERVATION elevation dimension – The
                   elevation of a GEOPHYSICAL-POINT-OBSERVATION relative to
                   Mean Sea Level (MSL).

                   MIN:  -0400
                   MAX:  +8850
                   UNITS:  Meters
                   SCALING FACTOR:  1

                   DOM:  A general domain comprised of the numeric characters
                   (0-9), a minus sign(-), and a plus sign(+).  Missing = +9999

POS:  46-50        FIXED-WEATHER-STATION call letter identifier – The
                   identifier that represents the call letters assigned to a
                   FIXED-WEATHER-STATION.

                   DOM:  A general domain comprised of the characters in the
                   ASCII character set. Missing = 99999.

POS:  51-54        METEOROLOGICAL-POINT-OBSERVATION quality control process
                   name – The name of the quality control process applied to a
                   weather observation.

                   DOM:  A general domain comprised of the ASCII character set.

*************************************************************************
                         Mandatory Data Section
*************************************************************************

POS:  55-57        WIND-OBSERVATION direction angle – The angle, measured in a
                   clockwise direction, between true north and the direction
                   from which the wind is  blowing.

                   MIN:  001
                   MAX:  360
                   UNITS:  Angular Degrees
                   SCALING FACTOR:  1

                   DOM:  A general domain comprised of the numeric characters
                   (0-9).  Missing = 999.

POS:  58-58        WIND-OBSERVATION direction quality code – The code that
                   denotes a quality status of a reported WIND-OBSERVATION
                   direction angle.

                   DOM:  A specific domain comprised of the characters in the
                   ASCII character set.

                   0 = No check
                   1 = Good
                   2 = Suspect
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                        3 = Erroneous
                        9 = Missing

POS: 59-59          WIND-OBSERVATION type code - The code that denotes the
                    character of the WIND-OBSERVATION.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    C: Calm
                    N: Normal
                    Q: Squall
                    V: Variable
                    9: Missing

POS:  60-63         WIND-OBSERVATION speed rate - The rate of horizontal travel
                    of air past a fixed point.

                    MIN:  0000
                    MAX:  0900
                    UNITS:  meters per second
                    SCALING FACTOR:  10

                    DOM:  A general domain comprised of the numeric characters
                    (0-9).  Missing = 9999.

POS:  64-64         WIND-OBSERVATION speed quality code - The code that denotes
                    a quality status of a reported WIND-OBSERVATION speed rate.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No check
                    1 = Good
                    2 = Suspect
                    3 = Erroneous
                    9 = Missing

POS: 65-69          SKY-CONDITION-OBSERVATION ceiling height dimension – The
                    height Above Ground Level (AGL) of the lowest cloud or
                    obscuring phenomena layer aloft with 5/8 or more summation
                    total sky cover, which may be predominantly opaque, or the
                    vertical visibility into a surface-based obstruction.

                    MIN:  00000
                    MAX:  21000
                    UNITS:  Meters
                    SCALING FACTOR:  1

                    DOM:  A general domain comprised of the numeric characters
                    (0-9).  99999 = missing.

POS:  70-70         SKY-CONDTION-OBSERVATION ceiling quality code - The code
                    that denotes a quality status of a reported ceiling height
                    dimension.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No Check
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```
                        1 = Good
                        2 = Suspect
                        3 = Erroneous
                        9 = Missing

POS:  71-71            SKY-CONDITION-OBSERVATION ceiling determination code – The
                       code that denotes the method used to determine the ceiling.

                       DOM:  A specific domain comprised of the characters in the
                       ASCII character set.

                       A: Aircraft
                       B: Balloon
                       C: Statistically derived
                       E: Estimated
                       M: Measured
                       R: Radar
                       W: Obscured
                       9: Missing

POS:  72-72            SKY-CONDITION-OBSERVATION CAVOK code - The code that
                       represents whether the 'Ceiling And Visibility Okay' (CAVOK)
                       condition has been reported.

                       DOM:  A specific domain comprised of the characters in the
                       ASCII character set.

                       N: No
                       Y: Yes

POS:  73-78            VISIBILITY-OBSERVATION distance dimension – The horizontal
                       distance at which an object can be seen and identified.

                       MIN:  000000
                       MAX:  160000
                       UNITS:  Meters

                       DOM:  A general domain comprised of the numeric characters
                       (0-9).  Missing = 999999

NOTE:  Values greater than 1600 are entered as 1600

POS:  79-79            VISIBILITY-OBSERVATION distance quality code – The code that
                       denotes a quality status of a reported distance of a
                       visibility observation.

                       DOM:  A specific domain comprised of the characters in the
                       ASCII character set.

                       0 = No check
                       1 = Good
                       2 = Suspect
                       3 = Erroneous
                       9 = Missing

POS:  80-80            VISIBILITY-OBSERVATION variability code – The code that
                       denotes whether or not the reported visibility is variable.

                       DOM:  A specific domain comprised of the characters in the
                       ASCII character set.
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                   N: Not variable
                   V: Variable

POS:  81-81        VISIBILITY-OBSERVATION quality variability code - The code
                   that denotes a quality status of a reported VISIBILITY-
                   OBSERVATION variability code.

                   DOM:  A specific domain comprised of the characters in the
                   ASCII character set.

                   0 = No check
                   1 = Good
                   2 = Suspect
                   3 = Erroneous
                   9 = Missing

POS:  82-86        AIR-TEMPERATURE-OBSERVATION air temperature – The
                   temperature of the air.

                   MIN:  -0932
                   MAX:  +0618
                   UNITS:  Degrees Celsius
                   SCALING FACTOR:  10

                   DOM:   A general domain comprised of the numeric characters
                   (0-9), a plus sign (+), and a minus sign(-).
                   +9999 = missing.

POS:  87-87        AIR-TEMPERATURE-OBSERVATION air-temperature quality code-
                   The code that denotes a quality status of an AIR-
                   TEMPERATURE-OBSERVATION.

                   DOM:  A specific domain comprised of the characters in the
                   ASCII character set.

                   0 = No check
                   1 = Good
                   2 = Suspect
                   3 = Erroneous
                   9 = Missing

POS:  88-92        AIR-TEMPERATURE-OBSERVATION dew point temperature - The
                   temperature to which a given parcel of air must be cooled at
                   constant pressure and water vapor content in order for
                   saturation to occur.

                   MIN:  -0982
                   MAX:  +0368
                   UNITS:  Degrees Celsius
                   SCALING FACTOR:  10

                   DOM:  A general domain comprised of the numeric characters
                   (0-9), a plus sign(+), and a minus sign(-). +9999 = missing.

POS:  93-93        AIR-TEMPERATURE-OBSERVATION dew point quality code – The
                   code that denotes a quality status of the reported dew point
                   temperature.

                   DOM:  A specific domain comprised of the characters in the
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ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
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POS: 94-98   ATMOSPHERIC-PRESSURE-OBSERVATION sea level pressure rate –
               The air pressure relative to Mean Sea Level (MSL).

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MIN:  08600
MAX:  10900
UNITS:  Hectopascals
SCALING FACTOR:  10
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               DOM: A general domain comprised of the numeric characters
               (0-9). 99999 = missing.

POS: 99-99   ATMOSPHERIC-PRESSURE-OBSERVATION sea level pressure quality
               code - The code that denotes a quality status of the sea
               level pressure of an ATMOSPHERIC-PRESSURE-OBSERVATION.

               DOM: A specific domain comprised of the characters in the
               ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
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*************************************************************************
                        Additional Data Section
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FLD LEN: 3   GEOPHYSICAL-POINT-OBSERVATION additional data identifier –
               The identifier that denotes the beginning of the additional
               data section.

               DOM: A specific domain comprised of the ASCII character set.
               ADD =Additional Data Section

FLD LEN: 3   LIQUID-PRECIPITATION occurrence identifier - The identifier
               that represents an episode of LIQUID-PRECIPITATION.

               DOM: A specific domain comprised of the characters in the
               ASCII character set.

               AA1 - AA4   An indicator of up to 4 repeating fields of
               the following items:

               LIQUID-PRECIPITATION period quantity
               LIQUID-PRECIPITATION depth dimension
               LIQUID-PRECIPITATION trace code

FLD LEN: 2   LIQUID-PRECIPITATION period quantity - The quantity of time
               over which the LIQUID-PRECIPITATION was measured.

               MIN: 00

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                      MAX:  48
                      UNITS:  Hours
                      SCALING FACTOR:  1

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set. 99 = missing.

FLD LEN: 4            LIQUID-PRECIPITATION depth dimension - The depth of LIQUID-
                     PRECIPITATION that is measured at the time of an
                     observation.

                      MIN:  0000
                      MAX:  2000
                      UNITS:  millimeters
                      SCALING FACTOR: 10

                      DOM:  A general domain comprised of the numeric characters
                      (0-9). 9999 = missing.

FLD LEN: 1            LIQUID-PRECIPITATION condition code - The code that denotes
                     whether a LIQUID-PRECIPITATION depth dimension was a trace
                     value.

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set.

                      1:measurement impossible or inaccurate
                      2:Trace
                      9:Missing

FLD LEN:  3          PRECIPITATION-OBSERVATION-HISTORY identifier – The
                     identifier that indicates the occurrence of precipitation
                     history information.

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set.

                      AC1  An indicator of the following items:
                      PRECIPITATION-OBSERVATION-HISTORY duration code
                      PRECIPITATION-OBSERVATION-HISTORY characteristic code

FLD LEN: 1           PRECIPITATION-OBSERVATION-HISTORY duration code - The code
                     that denotes the duration of precipitation.

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set.

                      0 = Lasted less than 1 hour
                      1 = Lasted 1 - 3 hours
                      2 = Lasted 3 - 6 hours
                      3 = Lasted more than 6 hours
                      9 = missing

FLD LEN: 1           PRECIPITATION-OBSERVATION-HISTORY characteristic code – The
                     code that denotes whether precipitation is continuous or
                     intermittent.

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set.
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                        C = Continuous
                        I = Intermittent
                        9 = missing

FLD LEN: 3              PRECIPITATION-BOGUS-OBSERVATION identifier - The identifier
                       that represents a PRECIPITATION-BOGUS-OBSERVATION.

                       DOM: A specific domain comprised of the characters in the
                       ASCII character set.

                       AG1  An indicator of the occurrence of the following items:
                       PRECIPITATION-OBSERVATION discrepancy code
                       PRECIPITATION-OBSERVATION estimated water equivalency
                       dimension

FLD LEN: 1             PRECIPITATION-BOGUS-OBSERVATION discrepancy code - The code
                       that denotes the type of discrepancy between a
                       PRECIPITATION-OBSERVATION and other related observations at
                       the same location.

                       DOM:  A specific domain comprised of the characters in the
                       ASCII character set.

                       0: Reported amount of precipitation and reported weather
                          agree
                       1: Precipitation missing or not reported and none inferred
                          by weather
                       2: Precipitation missing, but precipitation inferred by
                          weather
                       3: Precipitation reported, but none inferred by weather
                       4: Zero precipitation reported, but precipitation inferred
                          by weather
                       5: Zero precipitation reported, no precipitation inferred
                          and precipitation not occurring at the reporting station
                       9: Missing

FLD LEN: 3             PRECIPITATION-BOGUS-OBSERVATION estimated water equivalency
                       dimension - The estimated depth of precipitation in water
                       equivalency for a 3-hour synoptic period.

                       MIN:  000
                       MAX:  998
                       UNITS: millimeters
                       SCALING FACTOR:  1

                       DOM:  A general domain comprised of the numeric characters
                       (0-9).  999 = missing.

FLD LEN:  3            SNOW-DEPTH identifier - The identifier that denotes the
                       start of a SNOW-DEPTH data section.

                       DOM: A specific domain comprised of the characters in the
                       ASCII character set.

                       AJ1
                       SNOW-DEPTH dimension
                       SNOW-DEPTH condition code
                       SNOW-DEPTH equivalent water depth dimension
                       SNOW-DEPTH equivalent water condition code
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FLD LEN: 4          SNOW-DEPTH dimension - The depth of snow and ice on the
                    ground.

                    MIN:  0000
                    MAX:  1200
                    UNITS:  centimeters
                    SCALING FACTOR:  1

                    DOM:  A general domain comprised of the numeric characters
                    (0-9).  9999 = missing.

FLD LEN: 1          SNOW-DEPTH condition code - The code that denotes specific
                    conditions associated with the measurement of snow in a
                    PRECIPITATION-OBSERVATION.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    1: Measurement impossible or inaccurate
                    2: Snow cover not continuous
                    3: Trace
                    9: Missing

FLD LEN: 6          SNOW-DEPTH equivalent water depth dimension - The depth of
                    the liquid content of solid precipitation that has
                    accumulated on the ground.

                    MIN: 000000
                    MAX: 120000
                    UNITS: millimeters
                    SCALING FACTOR: 10

                    DOM:  A general domain comprised of the numeric characters
                    (0-9). 999999 = missing.

FLD LEN   1         SNOW-DEPTH equivalent water condition code - The code that
                    denotes specific conditions associated with the measurement
                    of the SNOW-DEPTH.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    1: Measurement impossible or inaccurate
                    2: Trace
                    9: Missing

FLD LEN: 3          HAIL identifier - The identifier that denotes the start of a
                    HAIL data section.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    HL1  An indicator of the occurrence of the following item:
                    HAIL dimension

FLD LEN: 3          HAIL size - The diameter of the largest hailstone observed.

                    MIN:  000
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                        MAX:  200
                        UNITS:  Centimeters
                        SCALING FACTOR: 10

                        DOM:  A general domain comprised of the numeric characters
                        (0-9).

FLD LEN: 3              SNOW-ACCUMULATION occurrence identifier - The identifier
that
                        represents an episode of SNOW-ACCUMULATION.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        AL1 - AL4    An indicator of up to 4 repeating fields of the
                                     following items:
                                     SNOW-ACCUMULATION six hour depth dimension
                                     SNOW-ACCUMULATION condition code
                                     SNOW-ACCUMULATION period quantity

FLD LEN: 2             SNOW-ACCUMULATION period quantity - The quantity of time
                        over which the SNOW-ACCUMULATION occurred.

                        MIN:  00
                        MAX:  72
                        UNITS:  Hours
                        SCALING FACTOR:  1

                        DOM:  A general domain comprised of the characters in the
                        ASCII character set. 99 = missing.

FLD LEN:  3            SNOW-ACCUMULATION depth dimension - The depth of a SNOW-
                        ACCUMULATION.

                        MIN:  000
                        MAX:  500
                        UNITS:  centimeters
                        SCALING FACTOR:  1

                        DOM:  A general domain comprised of the numeric characters
                        (0-9).  999 = Missing.

FLD LEN: 1            SNOW-ACCUMULATION condition code - The code that denotes
                        specific conditions associated with the measurement of the
                        depth of a SNOW-ACCUMULATION.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        1: Measurement impossible or inaccurate
                        2: Snow cover not continuous
                        3: Trace
                        9: Missing

FLD LEN: 3            PRESENT-WEATHER-OBSERVATION manual occurrence identifier –
                        The identifier that signifies the reporting of present
                        weather.

                        DOM:  A specific domain comprised of the ASCII characters.
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                         MW1 = first   weather reported
                         MW2 = second  weather reported
                         MW3 = third   weather reported
                         MW4 = fourth  weather reported
                         MW5 = fifth   weather reported
                         MW6 = sixth   weather reported
                         MW7 = seventh weather reported

                         An indicator of up to 7 repeating fields of the following
                         items:

                         PRESENT-WEATHER-OBSERVATION manual atmospheric condition
                         code.
                         PRESENT-WEATHER-OBSERVATION quality manual atmospheric
                         condition code

 FLD LEN:  2             PRESENT-WEATHER-OBSERVATION manual atmospheric condition
                         code - The code that denotes a specific type of weather
                         observed manually.

                         DOM:  A specific domain comprised of the characters in the
                         ASCII character set.
```

00-49 No precipitation at the station at the time of observation

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00-19 No precipitation, fog, ice fog (except for 11 and 12), duststorm,
       sandstorm, drifting or blowing snow at the station at the time of
       observation or, except for 09 and 17, during the preceding hour.

00: Cloud development not observed or not observable
01: Clouds generally dissolving or becoming less developed
02: State of sky on the whole unchanged
03: Clouds generally forming or developing
04: Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke
    or volcanic ashes
05: Haze
06: Widespread dust in suspension in the air, not raised by wind at or near
    the station at the time of observation
07: Dust or sand raised by wind at or near the station at the time of
    observation, but no well-developed dust whirl(s) or sand whirl(s), and no
    duststorm or sandstorm seen: or, in the case of ships, blowing spray at
    the station
08: Well-developed dust whirl(s) or sand whirl(s) seen at or near the station
    during the preceding hour or at the time of observation, but no duststorm
    or sandstorm
09: Duststorm or sandstorm within sight at the time of observation, or at the
    station during the preceding hour
10: Mist
11: Patches of shallow fog or ice fog at the station, whether on land or sea,
    not deeper than about 2 meters on land or 10 meters at sea
12: More or less continuous shallow fog or ice fog at the station, whether on
    land or sea, not deeper than about 2 meters on land or 10 meters at sea
13: Lightning visible, no thunder heard
14: Precipitation within sight, not reaching the ground or the surface of the
    sea
15: Precipitation within sight, reaching the ground or the surface of the sea,
    but distant, i.e. estimated to be more than 5 km from the station
16: Precipitation within sight, reaching the ground or the surface of the sea,
    near to, but not at the station

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17: Thunderstorm, but no precipitation at the time of observation
18: Squalls at or within sight of the station during the preceding hour or at
    the time of observation
19: Funnel cloud(s) (Tornado cloud or waterspout) at or within sight of the
    station during the preceding hour or at the time of observation
------------------------------------------------------------------------
20-29  Precipitation, fog, ice fog or thunderstorm at the station during the
       preceding hour, but not at the time of observation.
------------------------------------------------------------------------
20: Drizzle (not freezing) or snow grains not falling as shower(s)
21: Rain (not freezing)  not falling as shower(s)
22: Snow not falling as shower(s)
23: Rain and snow or ice pellets not falling as shower(s)
24: Freezing drizzle or freezing rain  not falling as shower(s)
25: Shower(s) of rain
26: Shower(s) of snow, or of rain and snow
27: Shower(s) of hail (Hail, small hail, snow pellets), or rain and hail
28: Fog or ice fog
29: Thunderstorm (with or without precipitation)
30: Slight or moderate duststorm or sandstorm has decreased during the
    preceding hour
31: Slight or moderate duststorm or sandstorm no appreciable change during the
    preceding hour
32: Slight or moderate duststorm or sandstorm has begun or has increased
    during the preceding hour
33: Severe duststorm or sandstorm has decreased during the preceding hour
34: Severe duststorm or sandstorm no appreciable change during the preceding
    hour
35: Severe duststorm or sandstorm has begun or has increased during the
    preceding hour
36: Slight or moderate drifting snow generally low (below eye level)
37: Heavy drifting snow generally low (below eye level)
38: Slight or moderate blowing snow generally high (above eye level)
39: Heavy blowing snow generally high (above eye level)
------------------------------------------------------------------------
40-49  Fog or ice fog at the time of observation
------------------------------------------------------------------------
40: Fog or ice fog at a distance at the time of observation, but not at the
    station during the preceding hour, the fog or ice fog extending to a level
    above that of the observer
41: Fog or ice fog in patches
42: Fog or ice fog, sky visible, has become thinner during the preceding hour
43: Fog or ice fog, sky invisible, has become thinner during the preceding
    hour
44: Fog or ice fog, sky visible, no appreciable change during the preceding
    hour
45: Fog or ice fog, sky invisible, no appreciable change during the preceding
    hour
46: Fog or ice fog, sky invisible, has begun or has become thicker during the
    preceding hour
47: Fog or ice fog, sky invisible, has begun or has become thicker during the
    preceding hour
48: Fog, depositing rime, sky visible
49: Fog, depositing rime, sky invisible
------------------------------------------------------------------------
50-99 Precipitation at the station at the time of observation
------------------------------------------------------------------------
50-59 Drizzle
------------------------------------------------------------------------
50: Drizzle, not freezing, intermittent, slight at time of observation
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51: Drizzle, not freezing, continuous, slight at time of observation
52: Drizzle, not freezing, intermittent, moderate at time of observation
53: Drizzle, not freezing, continuous, moderate at time of observation
54: Drizzle, not freezing, intermittent, heavy (dense) at time of observation
55: Drizzle, not freezing, continuous, heavy (dense) at time of observation
56: Drizzle, freezing, slight
57: Drizzle, freezing, moderate or heavy (dense)
58: Drizzle and rain, slight
59: Drizzle and rain, moderate or heavy
------------------------------------------------------------------------
60-69:  Rain
------------------------------------------------------------------------
60: Rain, not freezing, intermittent, slight at time of observation
61: Rain, not freezing, continuous, slight at time of observation
62: Rain, not freezing, intermittent, moderate at time of observation
63: Rain, not freezing, continuous, moderate at time of observation
64: Rain, not freezing, intermittent, heavy at time of observation
65: Rain, not freezing, continuous, heavy at time of observation
66: Rain, freezing, slight
67: Rain, freezing, moderate or heavy
68: Rain or drizzle and snow, slight
69: Rain or drizzle and snow, moderate or heavy
------------------------------------------------------------------------
70-79  Solid precipitation not in showers
------------------------------------------------------------------------
70: Intermittent fall of snowflakes, slight at time of observation
71: Continuous fall of snowflakes, slight at time of observation
72: Intermittent fall of snowflakes, moderate at time of observation
73: Continuous fall of snowflakes, moderate at time of observation
74: Intermittent fall of snowflakes, heavy at time of observation
75: Continuous fall of snowflakes, heavy at time of observation
76: Diamond dust (with or without fog)
77: Snow grains (with or without fog)
78: Isolated star-like snow crystals (with or without fog)
79: Ice pellets
------------------------------------------------------------------------
80-99  Showery precipitation, or precipitation with current or recent
       thunderstorm.
------------------------------------------------------------------------
80: Rain shower(s), slight
81: Rain shower(s), moderate or heavy
82: Rain shower(s), violent
83: Shower(s) of rain and snow mixed, slight
84: Shower(s) of rain and snow mixed, moderate or heavy
85: Show shower(s), slight
86: Snow shower(s), moderate or heavy
87: Shower(s) of snow pellets or small hail, with or without rain or rain and
    snow mixed, slight
88: Shower(s) of snow pellets or small hail, with or without rain or rain and
    snow mixed, moderate or heavy
89: Shower(s) of hail (hail, small hail, snow pellets) , with or without rain
    or rain and snow mixed, not associated with thunder, slight
90: Shower(s) of hail (hail, small hail, snow pellets), with or without rain
    or rain and snow mixed, not associated with thunder, moderate or heavy
91: Slight rain at time of observation, thunderstorm during the preceding hour
    but not at time of observation
92: Moderate or heavy rain at time of observation, thunderstorm during the
    preceding hour but not at time of observation
93: Slight snow, or rain and snow mixed or hail (Hail, small hail, snow
    pellets), at time of observation, thunderstorm during the preceding hour
```

but not at time of observation
94: Moderate or heavy snow, or rain and snow mixed or hail(Hail, small hail,
    snow pellets) at time of observation, thunderstorm during the preceding
    hour but not at time of observation
95: Thunderstorm, slight or moderate, without hail (Hail, small hail, snow
    pellets), but with rain and/or snow at time of observation, thunderstorm
    at time of observation
96: Thunderstorm, slight or moderate, with hail (hail, small hail, snow
    pellets) at time of observation, thunderstorm at time of observation
97: Thunderstorm, heavy, without hail (Hail, small hail, snow pellets),
    but with rain and/or snow at time of observation, thunderstorm at time of
    observation
98: Thunderstorm combined with duststorm or sandstorm at time of observation,
    thunderstorm at time of observation
99: Thunderstorm, heavy, with hail (Hail, small hail, snow pellets) at time of
    observation, thunderstorm at time of observation

FLD LEN: 1   PRESENT-WEATHER-OBSERVATION quality manual atmospheric
                  condition code - The code that denotes a quality status of a
                  reported present weather observation from a manual station.

                  DOM: A specific domain comprised of the characters in the
                  ASCII character set.

                  0 = No check
                  1 = Good
                  2 = Suspect
                  3 = Erroneous
                  9 = Missing

FLD LEN: 3   PRESENT-WEATHER-OBSERVATION automated occurrence identifier-
                  The identifier that signifies the reporting of present
                  weather.

                  DOM: A specific domain comprised of the ASCII characters.

                  AW1 = first automated weather report
                  PRESENT-WEATHER-OBSERVATION automated atmospheric condition
                  code.
                  PRESENT-WEATHER-OBSERVATION quality automated atmospheric
                  condition code

FLD LEN: 2   PRESENT-WEATHER-OBSERVATION automated atmospheric condition
                  code - The code that denotes a specific type of weather
                  reported by an automated device.

                  DOM: A specific domain comprised of the characters in the
                  ASCII character set.

00: No significant weather observed
01: Clouds generally dissolving or becoming less developed
02: State of sky on the whole unchanged during the past hour
03: Clouds generally forming or developing during the past hour
04: Haze, smoke, or dust in suspension in the air, visibility equal to or
    greater than 1km
05: Smoke
10: Mist
11: Diamond dust
12: Distant lightning
18: Squalls

(Code figures 20-26 are used to report precipitation, fog, or thunderstorm at
the station during the preceding hour, but not at the time of observation.)

20: Fog
21: Precipitation
22: Drizzle (not freezing) or snow grains
23: Rain (not freezing)
24: Snow
25: Freezing drizzle or freezing rain
26: Thunderstorm (with or without precipitation)
27: Blowing or drifting snow or sand
28: Blowing or drifting snow or sand, visibility equal to or greater than 1 km
29: Blowing or drifting snow or sand, visibility less than 1 km
30: Fog
31: Fog or ice fog in patches
32: Fog or ice fog, has become thinner during the past hour
33: Fog or ice fog, no appreciable change during the past hour
34: Fog or ice fog, has begun or become thicker during the past hour
35: Fog, depositing rime
40: Precipitation
41: Precipitation, slight or moderate
42: Precipitation, heavy
43: Liquid precipitation, slight or moderate
44: Liquid precipitation, heavy
45: Solid precipitation, slight or moderate
46: Solid precipitation, heavy
47: Freezing precipitation, slight or moderate
48: Freezing precipitation, heavy
50: Drizzle
51: Drizzle, not freezing, slight
52: Drizzle, not freezing, moderate
53: Drizzle, not freezing, heavy
54: Drizzle, freezing, slight
55: Drizzle, freezing, moderate
56: Drizzle, freezing, heavy
57: Drizzle and rain, slight
58: Drizzle and rain, moderate or heavy
60: Rain
61: Rain, not freezing, slight
62: Rain, not freezing, moderate
63: Rain, not freezing, heavy
64: Rain, freezing, slight
65: Rain, freezing, moderate
66: Rain, freezing, heavy
67: Rain or drizzle and snow, slight
68: Rain or drizzle and snow, moderate or heavy
70: Snow
71: Snow, slight
72: Snow, moderate
73: Snow, heavy
74: Ice pellets, slight
75: Ice pellets, moderate
76: Ice pellets, heavy
80: Showers or intermittent precipitation
81: Rain showers or intermittent rain, slight
82: Rain showers or intermittent rain, moderate
83: Rain showers or intermittent rain, heavy
84: Rain showers or intermittent rain, violent
85: Snow showers or intermittent rain, slight

86: Snow showers or intermittent rain, moderate
87: Snow showers or intermittent rain, heavy
90: Thunderstorm
91: Thunderstorm, slight or moderate, with no precipitation
92: Thunderstorm, slight or moderate, with rain showers and/or snow showers
93: Thunderstorm, slight or moderate, with hail
94: Thunderstorm, heavy, with no precipitation
95: Thunderstorm, heavy, with rain showers and/or snow
96: Thunderstorm, heavy, with hail
99: Tornado

FLD LEN: 1   PRESENT-WEATHER-OBSERVATION quality automated atmospheric
                   condition code - The code that denotes a quality status of a
                   reported present weather observation from an automated
                   station.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   0 = No check
                   1 = Good
                   2 = Suspect
                   3 = Erroneous
                   9 = Missing

FLD LEN: 3   PAST-WEATHER-OBSERVATION manual occurrence identifier – The
                   identifier that signifies the reporting of past weather.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   AY1 – AY2   An indicator of up to 2 repeating fields of the
                                following item:
                   PAST-WEATHER-OBSERVATION manual atmospheric condition code
                   PAST-WEATHER-OBSERVATION quality manual atmospheric
                   condition code
                   PAST-WEATHER-OBSERVATION period quantity
                   PAST-WEATHER-OBSERVATION period quality code

FLD LEN: 1   PAST-WEATHER-OBSERVATION manual atmospheric condition code-
                   The code that denotes a specific type of past weather
                   observed manually.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

Domain Value ID: Domain Value Definition Text
0: Cloud covering 1/2 or less of the sky throughout the appropriate period
1: Cloud covering more than 1/2 of the sky during part of the appropriate
   period and covering 1/2 or less during part of the period
2: Cloud covering more than 1/2 of the sky throughout the appropriate period
3: Sandstorm, duststorm or blowing snow
4: Fog or ice fog or thick haze
5: Drizzle
6: Rain
7: Snow, or rain and snow mixed
8: Shower(s)
9: Thunderstorm(s) with or without precipitation

FLD LEN: 1   PAST-WEATHER-OBSERVATION quality manual atmospheric

condition code - The code that denotes a quality status of a reported past weather observation from a manual station.

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 2   PAST-WEATHER-OBSERVATION period quantity - The quantity of time over which a PAST-WEATHER-OBSERVATION occurred.

MIN: 01
MAX: 24
UNITS: hours

DOM: A general domain comprised of the ASCII characters (0-9). 99 = missing

FLD LEN: 1   PAST-WEATHER-OBSERVATION period quality code - The code that denotes a quality status of a reported past weather period.

DOM: A specific domain comprised of the characters in the ASCII character set.

0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 3   PAST-WEATHER-OBSERVATION automated occurrence identifier – The identifier that signifies the reporting of present weather.

DOM: A specific domain comprised of the characters in the ASCII character set.

AZ1- AZ2   An indicator of the following item: (this may occur 0 - 2 times)
PAST-WEATHER-OBSERVATION automated atmospheric condition code
PAST-WEATHER-OBSERVATION quality automated atmospheric condition code
PAST-WEATHER-OBSERVATION period quantity
PAST-WEATHER-OBSERVATION period quality code

FLD LEN: 1   PAST-WEATHER-OBSERVATION automated atmospheric condition code - The code that denotes a specific type of past weather reported by an automated device.

DOM: A specific domain comprised of the characters in the ASCII character set.

0: No significant weather observed
1: Visibility reduced

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```
2: Blowing phenomena, visibility reduced
3: Fog
4: Precipitation
5: Drizzle
6: Rain
7: Snow or ice pellets
8: Showers or intermittent precipitation
9: Thunderstorm
```

FLD LEN: 1   PAST-WEATHER-OBSERVATION quality automated atmospheric condition code - The code that denotes a quality status of a reported past weather observation from an automated station.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
```

FLD LEN: 2   PAST-WEATHER-OBSERVATION period quantity - The quantity of time over which a PAST-WEATHER-OBSERVATION occurred.

```
MIN:  01
MAX:  24
UNITS:  hours
```

DOM: A general domain comprised of the ASCII characters (0-9). 99 = missing

FLD LEN: 1   PAST-WEATHER-OBSERVATION period quality code - The code that denotes a quality status of a reported past weather period.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
```

FLD LEN: 3   RUNWAY-VISUAL-RANGE-OBSERVATION identifier - The identifier that indicates the occurrence of a runway visibility report.

DOM: A specific domain comprised of the ASCII characters.
ED1

FLD LEN: 2   RUNWAY-VISUAL-RANGE-OBSERVATION direction angle - The angle as measured from magnetic north to the runway along which the visibility is observed.

```
MIN:  01
MAX:  36
UNITS: Tens of degrees
SCALING FACTOR:   1/10
```

DOM: A general domain comprised of the characters in the
ASCII character set.   99 = missing

FLD LEN: 1   RUNWAY-VISUAL-RANGE-OBSERVATION runway designator code – The
                   code that denotes the left, right or center runway as the
                   one to which the visibility applies.

                   DOM: A specific domain comprised of the ASCII characters:

                   L = left
                   C = center
                   R = right
                   U = unknown

FLD LEN: 4   RUNWAY-VISUAL-RANGE-OBSERVATION visibility dimension - The
                   dimension of the horizontal distance that can be seen along
                   the runway.

                   MIN: 0000
                   MAX: 5000
                   UNITS: meters

                   DOM: A general domain comprised of the ASCII characters (0-
                   9). 9999 = missing

FLD LEN: 3   SKY-COVER-LAYER identifier – The identifier that represents
                   a SKY-COVER-LAYER.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   GA1-GA6   An indicator of up to 6 repeating fields of the
                               following items:
                               SKY-COVER-LAYER coverage code
                               SKY-COVER-LAYER base height dimension
                               SKY-COVER-LAYER cloud type code

FLD LEN: 2   SKY-COVER-LAYER coverage code – The code that denotes the
                   fraction of the total celestial dome covered by a SKY-COVER-
                   LAYER.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   00: None, SKC or CLR
                   01: One   okta – 1/10 or less but not zero
                   02: Two   oktas – 2/10 – 3/10, or FEW
                   03: Three oktas – 4/10
                   04: Four oktas – 5/10, or SCT
                   05: Five oktas – 6/10
                   06: Six   oktas – 7/10 – 8/10
                   07: Seven oktas – 9/10 or more but not 10/10, or BKN
                   08: Eight oktas - 10/10, or OVC
                   09: Sky obscured, or cloud amount cannot be estimated
                   10: Partial obscuration
                   99: Missing

FLD LEN: 6   SKY-COVER-LAYER base height dimension – The height relative
                   to a VERTICAL-REFERENCE-DATUM of the lowest surface of a
                   cloud.

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```
              MIN:  -00400
              MAX:  +35000
              UNITS:  Meters
              SCALING FACTOR:  1

              DOM:  A general domain comprised of the numeric characters
              (0-9). +99999 = missing
```

FLD LEN: 2   SKY-COVER-LAYER cloud type code - The code that denotes the
                    classification of the clouds that comprise a SKY-COVER-
                    LAYER.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    00: Cirrus (Ci)
                    01: Cirrocumulus (Cc)
                    02: Cirrostratus (Cs)
                    03: Altocumulus (Ac)
                    04: Altostratus (As)
                    05: Nimbostratus (Ns)
                    06: Stratocumulus (Sc)
                    07: Stratus (St)
                    08: Cumulus (Cu)
                    09: Cumulonimbus (Cb)
                    10: Cloud not visible owing to darkness, fog, dust storm,
                        sandstorm, or other analogous phenomena
                    99: Missing

FLD LEN: 3   SKY-CONDITION-OBSERVATION identifier - An indicator that
                    denotes the start of a SKY-CONDITION-OBSERVATION data group.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    GF1 : An indicator of the occurrence of the following data
                          items:

                    SKY-CONDITION-OBSERVATION total coverage code
                    SKY-CONDITION-OBSERVATION quality total coverage code
                    SKY-CONDITION-OBSERVATION total lowest cloud cover code
                    SKY-CONDITION-OBSERVATION quality total lowest cloud cover
                    code
                    SKY-CONDITION-OBSERVATION low cloud genus code
                    SKY-CONDITION-OBSERVATION quality low cloud genus code
                    SKY-CONDITION-OBSERVATION lowest cloud base height dimension
                    SKY-CONDITION-OBSERVATION lowest cloud base height quality
                    code
                    SKY-CONDITION-OBSERVATION mid cloud genus code
                    SKY-CONDITION-OBSERVATION quality mid cloud genus code
                    SKY-CONDITION-OBSERVATION high cloud genus code
                    SKY-CONDITION-OBSERVATION quality high cloud genus code

FLD LEN: 2   SKY-CONDITION-OBSERVATION total coverage code - The code
                    that denotes the fraction of the total celestial dome
                    covered by clouds or other obscuring phenomena.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

```
00: None, SKC or CLR
01: One   okta  - 1/10 or less but not zero
02: Two   oktas - 2/10 - 3/10, or FEW
03: Three oktas - 4/10
04: Four  oktas - 5/10, or SCT
05: Five  oktas - 6/10
06: Six   oktas - 7/10 - 8/10
07: Seven oktas - 9/10 or more but not 10/10, or BKN
08: Eight oktas - 10/10, or OVC
09: Sky obscured, or cloud amount cannot be estimated
10: Partial obscuration
99: Missing
```

FLD LEN: 1   SKY-CONDITION-OBSERVATION quality total coverage code- The code that denotes a quality status of a reported total sky coverage code.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
```

FLD LEN: 2   SKY-CONDITION-OBSERVATION total lowest cloud cover code – The code that represents the fraction of the celestial dome covered by all low clouds present; if no low clouds are present, the code denotes the fraction covered by all middle level clouds present.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
00: None
01: One   okta or 1/10 or less but not zero
02: Two   oktas or 2/10-3/10
03: Three oktas or 4/10
04: Four  oktas or 5/10
05: Five  oktas or 6/10
06: Six   oktas or 7/10 - 8/10
07: Seven oktas or 9/10 or more but not 10/10
08: Eight oktas or 10/10
09: Sky obscured, or cloud amount cannot be estimated
99: Missing
```

FLD LEN: 1   SKY-CONDITION-OBSERVATION quality total lowest cloud cover code - The code that denotes a quality status of a reported total lowest cloud cover code.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing
```

FLD LEN: 2   SKY-CONDITION-OBSERVATION low cloud genus code - The code
                    that denotes a type of low cloud.

                    DOM: A specific domain comprised of the characters in the
                    ASCII Character set.

                    00: No low clouds
                    01: Cumulus humulis or Cumulus fractus other than of bad
                        weather or both
                    02: Cumulus mediocris or congestus, with or without Cumulus
                        of species fractus or humulis or Stratocumulus all
                        having bases at the same level
                    03: Cumulonimbus calvus, with or without Cumulus,
                        Stratocumulus or Stratus
                    04: Stratocumulus cumulogenitus
                    05: Stratocumulus other than Stratocumulus cumulogenitus
                    06: Stratus nebulosus or Stratus fractus other than of bad
                        weather, or both
                    07: Stratus fractus or Cumulus fractus of bad weather, or
                        both (pannus) usually below Altostratus or Nimbostratus
                    08: Cumulus and Stratocumulus other than Stratocumulus
                        cumulogenitus, with bases at different levels
                    09: Cumulonimbus capillatus (often with an anvil), with or
                        without Cumulonimbus calvus, Cumulus, Stratocumulus,
                        Stratus or pannus
                    99: Missing

FLD LEN: 1   SKY-CONDITION-OBSERVATION quality low cloud genus code – The
                    code that denotes a quality status of a reported low cloud
                    type.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No check
                    1 = Good
                    2 = Suspect
                    3 = Erroneous
                    9 = Missing

FLD LEN: 5   SKY-CONDITION-OBSERVATION lowest cloud base height dimension
                     - The height Above Ground Level (AGL) of the base of the
                    lowest cloud.

                    MIN: 00000
                    MAX: 21000
                    UNITS: Meters
                    SCALING FACTOR: 1

                    DOM: A general domain comprised of the numeric characters
                    (0-9). 99999 = missing.

FLD LEN: 1   SKY-CONDITION-OBSERVATION lowest cloud base height quality
                    code - The code that denotes a quality status of a lowest
                    cloud base height.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

```
                          0 = No check
                          1 = Good
                          2 = Suspect
                          3 = Erroneous
                          9 = Missing

 FLD LEN: 2          SKY-CONDITION-OBSERVATION mid cloud genus code - The code
                     that denotes a type of middle level cloud.

                     DOM:  A specific domain comprised of the characters in the
                     ASCII character set.

                     00: No middle clouds
                     01: Altostratus translucidus
                     02: Altostratus opacus or Nimbostratus
                     03: Altocumulus translucidus at a single level
                     04: Patches (often lenticular) of Altocumulus translucidus,
                         continually changing and occurring at one or more levels
                     05: Altocumulus translucidus in bands, or one or more layers
                         of Altocumulus translucidus or opacus, progressively
                         invading the sky; these Altocumulus clouds generally
                         thicken as a whole
                     06: Altocumulus cumulogentis (or cumulonimbogentus)
                     07: Altocumulus translucidus or opacus in two or more
                         layers, or Altocumulus opacus in a single layer, not
                         progressively invading the sky, or Altocumulus with
                         Altostratus or Nimbostratus
                     08: Altocumulus castellanus or floccus
                     09: Altocumulus of a chaotic sky; generally at several
                         levels
                     99: Missing

 FLD LEN: 1          SKY-CONDITION-OBSERVATION quality mid cloud genus code – The
                     code that denotes a quality status of a reported mid cloud
                     type.

                     DOM:  A specific domain comprised of the characters in the
                     ASCII character set.

                          0 = No check
                          1 = Good
                          2 = Suspect
                          3 = Erroneous
                          9 = Missing

 FLD LEN: 2          SKY-CONDITION-OBSERVATION high cloud genus code - The code
                     that denotes a type of high cloud.

                     DOM:  A specific domain comprised of the characters in the
                     ASCII character set.

                     00: No High Clouds
                     01: Cirrus fibratus, sometimes uncinus, not progressively
                         invading the sky
                     02: Cirrus spissatus, in patches or entangled sheaves, which
                         usually do not increase and sometimes seem to be the
                         remains of the upper part  of a Cumulonimbus; or Cirrus
                         castellanus or floccus
                     03: Cirrus spissatus cumulonimbogentus
                     04: Cirrus unicinus or fibratus, or both, progressively
```

invading the sky; they generally thicken as a whole
05: Cirrus (often in bands) and Cirrostratus, or
Cirrostratus alone, progressively invading the sky; they
generally thicken as a whole, but the continuous veil
does not reach 45 degrees above the horizon
06: Cirrus (often in bands) and Cirrostratus, or
Cirrostratus alone, progressively invading the sky; they
generally thicken as a whole; the continuous veil
extends more than 45 degrees above the horizon, without
the sky being totally covered.
07: Cirrostratus covering the whole sky
08: Cirrostratus not progressively invading the sky and not
entirely covering it
09: Cirrocumulus alone, or Cirrocumulus predominant among
the High clouds
99: Missing

FLD LEN: 1   SKY-CONDITION-OBSERVATION quality high cloud genus code –
The code that denotes a quality status of a reported high
cloud type.

DOM: A specific domain comprised of the characters in the
ASCII character set.

0 = No check
1 = Good
2 = Suspect
3 = Erroneous
9 = Missing

FLD LEN: 3   SKY-COVER-SUMMATION-STATE identifier - The identifier that
denotes the availability of a SKY-COVER-SUMMATION-STATE.

DOM: A specific domain comprised of the ASCII characters

GD1 - GD4 An indicator of up to 4 repeating fields of the
following items

SKY-COVER-SUMMATION-STATE coverage code
SKY-COVER-SUMMATION-STATE height dimension
SKY-COVER-SUMMATION-STATE characteristic code

FLD LEN: 1   SKY-COVER-SUMMATION-STATE coverage code - The code that
denotes the portion of the total celestial dome covered by
all layers of clouds and other obscuring phenomena at or
below a given height.

DOM: A specific domain comprised of the ASCII characters

0: Clear – No coverage
1: FEW – 2/8 or less coverage (not including zero)
2: SCATTERED – 3/8-4/8 coverage
3: BROKEN – 5/8-7/8 coverage
4: OVERCAST – 8/8 coverage
5: OBSCURED
6: PARTIALLY OBSCURED
9: MISSING

FLD LEN: 6   SKY-COVER-SUMMATION-STATE height dimension – The height
above ground level (AGL) of the base of the cloud layer or

obscuring phenomena.

```
MIN:  -00400
MAX:  +35000
UNITS:  meters
```

DOM: A general domain comprised of the ASCII characters 0-9, a plus (+) and a minus sign (-). +99999 = missing

FLD LEN: 1   SKY-COVER-SUMMATION-STATE characteristic code - The code that represents a characteristic of a specific cloud or other obscuring phenomena layer.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
1: Variable height
2: Variable amount
3: Thin clouds
9: Missing
```

FLD LEN: 3   BELOW-STATION-CLOUD-LAYER identifier - The identifier that represents a BELOW-STATION-CLOUD-LAYER.

DOM: A specific domain comprised of the characters in the ASCII character set.

GG1-GG6   An indicator of up to 6 repeating fields of the following items:

```
BELOW-STATION-CLOUD-LAYER coverage code
BELOW-STATION-CLOUD-LAYER top height dimension
BELOW-STATION-CLOUD-LAYER type code
BELOW-STATION-CLOUD-LAYER top code
```

FLD LEN: 2   BELOW-STATION-CLOUD-LAYER coverage code - The code that denotes the extent of coverage of a BELOW-STATION-CLOUD-LAYER.

DOM: A specific domain comprised of the characters in the ASCII character set.

```
00: None
01: One   okta  - 1/10 or less but not zero
02: Two   oktas - 2/10 - 3/10
03: Three oktas - 4/10
04: Four  oktas - 5/10
05: Five  oktas - 6/10
06: Six   oktas - 7/10 - 8/10
07: Seven oktas - 9/10 or more but not 10/10
08: Eight oktas - 10/10
09: Sky obscured, or cloud amount cannot be estimated
10: Partial obscuration
99: Missing
```

FLD LEN: 5   BELOW-STATION-CLOUD-LAYER top height dimension - The height above mean sea level (MSL) of the top of a BELOW-STATION-CLOUD-LAYER.

MIN: 00000

29

```
                    MAX:  35000
                    UNITS:  Meters
                    SCALING FACTOR:  1

                    DOM:  A general domain comprised of the numeric characters
                    (0-9).  99999 = missing

FLD LEN: 2          BELOW-STATION-CLOUD-LAYER type code - The code that denotes
                    the classification of the clouds that comprise a BELOW-
                    STATION-CLOUD-LAYER.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    00: Cirrus (Ci)
                    01: Cirrocumulus (Cc)
                    02: Cirrostratus (Cs)
                    03: Altocumulus (Ac)
                    04: Altostratus (As)
                    05: Nimbostratus (Ns)
                    06: Stratocumulus (Sc)
                    07: Stratus (St)
                    08: Cumulus (Cu)
                    09: Cumulonimbus (Cb)
                    10: Cloud not visible owing to darkness, fog, dust storm,
                        sandstorm, or other analogous phenomena
                    99: Missing

FLD LEN: 2          BELOW-STATION-CLOUD-LAYER top code - The code that denotes
                    the characteristics of the upper surface of a BELOW-STATION-
                    CLOUD-LAYER

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    00: Isolated cloud or fragments of clouds
                    01: Continuous flat tops
                    02: Broken cloud - small breaks, flat tops
                    03: Broken cloud - large breaks, flat tops
                    04: Continuous cloud, undulation tops
                    05: Broken cloud - small breaks, undulating tops
                    06: Broken cloud - large breaks, undulating tops
                    07: Continuous or almost continuous with towering clouds
                        above the top of the layer
                    08: Groups of waves with towering clouds above the top of
                        the layer
                    09: Two of more layers at different levels
                    99: Missing

FLD LEN:  3         SUNSHINE-OBSERVATION identifier - The identifier that
                    denotes the availability of sunshine information.

                    DOM:  A specific domain comprised of the ASCII characters
                          GJ1

FLD LEN:  4         SUNSHINE-OBSERVATION sunshine duration quantity - The
                    quantity of time sunshine occurred over the reporting
                    period.

                    MIN:  0000
```

```
                        MAX:  6000
                        UNITS:  minutes

                        DOM:  A general domain comprised of the ASCII characters
                              0-9.

     FLD LEN:  3        GROUND-SURFACE-OBSERVATION identifier - The identifier that
                        denotes the availability of a GROUND-SURFACE-OBSERVATION.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        IA1: An indicator of the occurrence of the following data
                             item:

                        GROUND-SURFACE-OBSERVATION code

     FLD LEN:  2        GROUND-SURFACE-OBSERVATION code - The code that denotes the
                        physical condition of the ground's surface.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.
```

NOTE: Code values 10-19 indicate the state of the ground without snow or
      measurable ice cover.

00: Surface of ground dry (no appreciable amount of dust or loose sand)
01: Surface of ground dry (without cracks and no appreciable amount of dust or
    loose sand and without snow or measurable ice cover)
02: Extremely dry with cracks (without snow or measurable ice cover)
03: Loose dry dust or sand not covering ground completely (without snow or
    measurable ice cover)
04: Loose dry dust or sand covering more than one-half of ground (but not
    completely)
05: Loose dry dust or sand covering ground completely
06: Thin cover of loose dry dust or sand covering ground completely (without
    snow or measurable ice cover)
07: Moderate or thick cover of loose dry dust or sand covering ground
    completely (without snow or measurable ice cover)
08: Surface of ground moist
09: Surface of ground moist (without snow or measurable ice cover)
10: Surface of ground wet (standing water in small or large pools on surface)
11: Surface of ground wet (standing water in small or large pools on surface
    without snow or measurable ice cover)
12: Flooded (without snow or measurable ice cover)
13: Surface of ground frozen
14: Surface of ground frozen (without snow or measurable ice cover)
15: Glaze or ice on ground, but no snow or melting snow
16: Glaze on ground (without snow or measurable ice cover)
17: Ground predominantly covered by ice
18: Snow or melting snow (with or without ice) covering less than one-half of
    the ground
19: Snow or melting snow (with or without ice) covering more than one-half of
    the ground but ground not completely covered
20: Snow or melting snow (with or without ice) covering ground completely
21: Loose dry snow covering less than one-half of the ground
22: Loose dry snow covering at least one half of the ground (but not
    completely)
23: Even layer of loose dry snow covering ground completely
24: Uneven layer of loose dry snow covering ground completely

25: Compact or wet snow (with or without ice) covering less than one-half of
    the ground
26: Compact or wet snow (with or without ice) covering at least one-half of
    the ground but ground not completely covered
27: Even layer of compact or wet snow covering ground completely
28: Uneven layer of compact or wet snow covering ground completely
29: Snow covering ground completely; deep drifts

FLD LEN: 3   GROUND-SURFACE-OBSERVATION minimum-temperature identifier-
                    The identifier that denotes the availability of GROUND-
                    SURFACE-OBSERVATION minimum temperature data.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    IA2: An indicator of the occurrence of the following data
                          item:

                    GROUND-SURFACE-OBSERVATION minimum-temperature period
                    quantity
                    GROUND-SURFACE-OBSERVATION minimum temperature

FLD LEN: 3   GROUND-SURFACE-OBSERVATION minimum-temperature period
                    quantity - The quantity of time over which the ground
                    temperature was sampled to determine the minimum
                    temperature.

                    MIN: 001
                    MAX: 480
                    UNITS: hours
                    SCALING FACTOR: 10

                    DOM: A general domain comprised of the numeric characters
                    (0-9). 999=Missing

FLD LEN: 5   GROUND-SURFACE-OBSERVATION minimum temperature - The minimum
                    temperature of the ground's surface recorded during the
                    observation period.

                    MIN: -1100
                    MAX: +1500
                    UNITS: Degrees Celsius
                    SCALING FACTOR: 10

                    DOM: A general domain comprised of the numeric
                    characters(0-9), a plus sign(+), and a minus sign(-).

FLD LEN: 3   EXTREME-AIR-TEMPERATURE identifier - The identifier that
                    denotes the start of an EXTREME-AIR-TEMPERATURE data
                    section.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    KA1-KA2   An indicator of up to 2 repeating fields of the
                              following items:

                         EXTREME-AIR-TEMPERATURE period quantity
                         EXTREME-AIR-TEMPERATURE code
                         EXTREME-AIR-TEMPERATURE air temperature

FLD LEN: 3   EXTREME-AIR-TEMPERATURE period quantity - The quantity of
time over which temperatures were sampled to determine the
EXTREME-AIR-TEMPERATURE.

MIN: 001
MAX: 480
UNITS: Hours:
SCALING FACTOR: 10

DOM: A general domain comprised of the ASCII character set,
999 = missing

FLD LEN: 1   EXTREME-AIR-TEMPERATURE code - The code that denotes an
EXTREME-AIR-TEMPERATURE as a maximum or a minimum.

DOM: A specific domain comprised of the characters in the
ASCII character set.

N: Minimum temperature
M: Maximum temperature
9: missing

FLD LEN: 5   EXTREME-AIR-TEMPERATURE temperature - The temperature of the
high or low air temperature for a given period.

MIN: -1100
MAX: +0630
UNITS: Degrees Celsius
SCALING FACTOR: 10

DOM: A general domain comprised of the numeric
characters(0-9), a plus sign(+), and a minus sign(-).
+9999 = missing

FLD LEN: 3   ATMOSPHERIC-PRESSURE-OBSERVATION identifier –
The identifier that denotes the start of a ATMOSPHERIC-
PRESSURE-OBSERVATION data section.

DOM: A specific domain comprised of the characters in the
ASCII character set.

MA1   An indicator of the occurrence of the following items:
ATMOSPHERIC-PRESSURE-OBSERVATION altimeter setting rate
ATMOSPHERIC-PRESSURE-OBSERVATION altimeter quality code
ATMOSPHERIC-PRESSURE-OBSERVATION station pressure rate
ATMOSPHERIC-PRESSURE-OBSERVATION station pressure quality
code

FLD LEN: 5   ATMOSPHERIC-PRESSURE-OBSERVATION altimeter setting rate –
The pressure value to which an aircraft altimeter is set so
that it will indicate the altitude relative to mean sea-
level of an aircraft on the ground at the location for which
the value was determined.

MIN: 08635
MAX: 10904
UNITS: Hectopascals
SCALING FACTOR: 10

DOM: A general domain comprised of the numeric characters
(0-9). Missing = 99999

FLD LEN: 1   ATMOSPHERIC-PRESSURE-OBSERVATION altimeter quality code –
                    The code that denotes a quality status of an altimeter
                    setting rate.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No check
                    1 = Good
                    2 = Suspect
                    3 = Erroneous
                    9 = Missing

FLD LEN: 5   ATMOSPHERIC-PRESSURE-OBSERVATION station pressure rate – The
                    atmospheric pressure at the observation point.

                    MIN: 04500
                    MAX: 10900
                    UNITS: Hectopascals
                    SCALING FACTOR: 10

                    DOM: A general domain comprised of the numeric characters
                    (0-9). 99999 = missing.

FLD LEN: 1   ATMOSPHERIC-PRESSURE-OBSERVATION station pressure quality
                    code - The code that denotes a quality status of the station
                    pressure of an ATMOSPHERIC-PRESSURE-OBSERVATION.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No check
                    1 = Good
                    2 = Suspect
                    3 = Erroneous
                    9 = Missing

FLD LEN: 3   ATMOSPHERIC-PRESSURE-CHANGE identifier - The identifier that
                    denotes the start of a ATMOSPHERIC-PRESSURE-CHANGE data
                    section.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                Domain Value ID: Domain Value Definition Text

                MD1 An indicator of the occurrence of the following items:
                ATMOSPHERIC-PRESSURE-CHANGE tendency code
                ATMOSPHERIC-PRESSURE-CHANGE quality tendency code
                ATMOSPHERIC-PRESSURE-CHANGE three hour quantity
                ATMOSPHERIC-PRESSURE-CHANGE quality three hour code
                ATMOSPHERIC-PRESSURE-CHANGE twenty four hour quantity
                ATMOSPHERIC-PRESSURE-CHANGE quality twenty four hour code

FLD LEN: 1   ATMOSPHERIC-PRESSURE-CHANGE tendency code - The code that
                    denotes the characteristics of a ATMOSPHERIC-PRESSURE-CHANGE
                    that occurs over a period of three hours.

DOM: A specific domain comprised of the characters in the
                ASCII character set.

         Domain Value ID: Domain Value Definition Text
         0: Increasing, then decreasing; atmospheric pressure the same or
            higher than 3 hours ago
         1: Increasing then steady; or increasing, then increasing more
            slowly; atmospheric pressure now higher than 3 hours ago
         2: Increasing (steadily or unsteadily); atmospheric pressure now
            higher than 3 hours ago
         3: Decreasing or steady, then increasing; or increasing, then
            increasing more rapidly; atmospheric pressure now higher than 3
            hours ago
         4: Steady; atmospheric pressure the same as 3 hours ago
         5: Decreasing, then increasing; atmospheric pressure the
            same or lower than 3 hours ago
         6: Decreasing, then steady; or decreasing, then decreasing
            more slowly; atmospheric pressure now lower than 3 hours
            ago
         7: Decreasing (steadily or unsteadily); atmospheric pressure
            now lower than 3 hours ago
         8: Steady or increasing, then decreasing; or decreasing,
            then decreasing more rapidly; atmospheric pressure now
            lower than 3 hours ago
         9: Missing

FLD LEN: 1   ATMOSPHERIC-PRESSURE-CHANGE quality tendency code - The code
                 that denotes a quality status of the tendency of an
                 ATMOSPHERIC-PRESSURE-CHANGE.

                 DOM: A specific domain comprised of the characters in the
                 ASCII character set.

                 0 = No check
                 1 = Good
                 2 = Suspect
                 3 = Erroneous
                 9 = Missing

FLD LEN: 3   ATMOSPHERIC-PRESSURE-CHANGE three hour quantity – The
                 absolute value of the quantity of change in atmospheric
                 pressure measured at the beginning and end of a three hour
                 period.

                 MIN: 000
                 MAX: 500
                 UNITS: Hectopascals
                 SCALING FACTOR: 10

                 DOM: A general domain comprised of the numeric characters
                 (0-9). Missing = 999

FLD LEN: 1   ATMOSPHERIC-PRESSURE-CHANGE quality three hour code – The
                 code that denotes the quality status of the three hour
                 quantity for an ATMOPSHERIC-PRESSURE-CHANGE.

                 DOM: A specific domain comprised of the characters in the
                 ASCII character set.

```
                        0 = No check
                        1 = Good
                        2 = Suspect
                        3 = Erroneous
                        9 = Missing


FLD LEN: 4              ATMOSPHERIC-PRESSURE-CHANGE twenty four hour quantity – The
                       quantity of change in atmospheric pressure measured at the
                       beginning and end of a twenty four hour period.

                        MIN:  -800
                        MAX:  +800
                        UNITS:  Hectopascals
                        SCALING FACTOR:  10

                        DOM:  A general domain comprised of the numeric
                        characters(0-9), a plus sign(+), and a minus sign(-). +999 =
                        missing


FLD LEN: 1              ATMOSPHERIC-PRESSURE-CHANGE quality twenty four hour code –
                       The code that denotes a quality status of a reported twenty
                       four hour ATMOSPHERIC-PRESSURE-CHANGE.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        0 = No check
                        1 = Good
                        2 = Suspect
                        3 = Erroneous
                        9 = Missing


FLD LEN:  3             GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL identifier - The i
                       identifier that denotes the availability of GEOPOTENTIAL-
                       HEIGHT-ISOBARIC-LEVEL data.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        ME1:  An indicator of the occurrence of the following data
                            items:
                        GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL code
                        GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension


FLD LEN: 1              GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL code - The code that
                       denotes the isobaric surface used to represent geopotential
                       height.

                        DOM:  A specific domain comprised of the characters in the
                        ASCII character set.

                        Domain Value ID: Domain Value Definition Text
                        1: 1000 hectopascals
                        2:  925 hectopascals
                        3:  850 hectopascals
                        4:  700 hectopascals
                        5:  500 hectopascals
                        9: Missing


FLD LEN: 4              GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL height dimension – The
```

height of a   GEOPOTENTIAL-HEIGHT-ISOBARIC-LEVEL

MIN: 0000
MAX: 9998
UNITS: Geopotential Meters
SCALING FACTOR: 1

DOM: A general domain comprised of the numeric characters
(0-9). 9999 = missing

FLD LEN: 3   SUPPLEMENTARY-WIND-OBSERVATION identifier - The identifier
                   that denotes the start of a SUPPLEMENTARY-WIND-OBSERVATION
                   data section.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   OA1 - OA3 An indicator of up to 3 occurrences of the
                   following item:
                   SUPPLEMENTARY-WIND-OBSERVATION type code
                   SUPPLEMENTARY-WIND-OBSERVATION period quantity
                   SUPPLEMENTARY-WIND-OBSERVATION speed rate

FLD LEN: 1   SUPPLEMENTARY-WIND-OBSERVATION type code - The code that
                   denotes a type of SUPPLEMENTARY-WIND-OBSERVATION.

                   DOM: A specific domain comprised of the ASCII characters.
                   1 = Average speed of prevailing wind
                   2 = Mean wind speed
                   3 = Maximum instantaneous wind speed
                   4 = Maximum gust speed
                   5 = Maximum mean wind speed
                   6 = Maximum 1-minute mean wind speed
                   9 = missing

FLD LEN: 2   SUPPLEMENTARY-WIND-OBSERVATION period quantity - The
                   quantity of time over which a SUPPLEMENTARY-WIND-OBSERVATION
                   occurred.

                   MIN: 01
                   MAX: 48
                   UNITS: Hours

                   DOM: A general domain comprised of the ASCII characters.
                   99 = missing

FLD LEN: 4   SUPPLEMENTARY-WIND-OBSERVATION speed rate - The rate of
                   horizontal speed of air reported in the SUPPLEMENTARY-WIND-
                   OBSERVATION.

                   MIN: 0000
                   MAX: 2000
                   UNITS: Meters per Second
                   SCALING FACTOR: 10

                   DOM: A general domain comprised of the numeric characters
                   (0-9). 9999 = missing

FLD LEN: 3   WIND-GUST-OBSERVATION identifier - The identifier that
                   denotes the start of a WIND-GUST-OBSERVATION data section.

DOM: A specific domain comprised of the characters in the
ASCII character set.

OC1   An indicator of the occurrence of the following item:
WIND-GUST-OBSERVATION speed rate
WIND-GUST-OBSERVATION quality code

FLD LEN: 4   WIND-GUST-OBSERVATION speed rate - The rate of speed of a
                    wind gust.

                    MIN: 0050
                    MAX: 1100
                    UNITS: Meters per second
                    SCALING FACTOR: 10

                    DOM: A general domain comprised of the numeric characters
                    (0-9).

FLD LEN: 1   WIND-GUST-OBSERVATION quality code - The code that denotes a
                    quality status of a reported WIND-GUST-OBSERVATION speed
                    rate.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    0 = No check
                    1 = Good
                    2 = Suspect
                    3 = Erroneous
                    9 = Missing

FLD LEN: 3   SEA-SURFACE-TEMPERATURE-OBSERVATION identifier – The
                    identifier that denotes the start of a SEA-SURFACE-
                    TEMPERATURE-OBSERVATION temperature data section.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character.

                    SA1   An indicator of the occurrence of the following item:
                    SEA-SURFACE-TEMPERATURE-OBSERVATION temperature

FLD LEN: 4   SEA-SURFACE-TEMPERATURE-OBSERVATION temperature – The
                    temperature of the water at the surface.

                    MIN: –050
                    MAX: +450
                    UNITS: Degrees Celsius
                    SCALING FACTOR: 10

                    DOM: A general domain comprised of the numeric
                    characters(0-9), a plus sign(+), and a minus sign(-).

FLD LEN: 3   WAVE-MEASUREMENT identifier - The identifier that represents
                    the availability of a WAVE-MEASUREMENT.

                    DOM: A specific domain comprised of the characters in the
                    ASCII character set.

                    UA1: An indicator of the occurrence of the following data

```
                       items:
                       WAVE-MEASUREMENT method code
                       WAVE-MEASUREMENT wave period quantity
                       WAVE-MEASUREMENT wave height dimension
                       WAVE-MEASUREMENT sea state code

FLD LEN:  1        WAVE-MEASUREMENT method code - A code that represents the
                   method used to obtain a WAVE-MEASUREMENT.

                   DOM:  A specific domain comprised of the ASCII characters

                   M:  Manual
                   I:  Instrumental
                   9:  Missing

FLD LEN:  2        WAVE-MEASUREMENT wave period quantity - The quantity of time
                   required for two successive wave crests to pass a fixed
                   point.

                   MIN: 00
                   MAX: 14
                   UNITS: Seconds
                   SCALING FACTOR:  1

                   DOM:  A general domain comprised of the numeric characters
                   (0-9).  Missing = 99.

FLD LEN:  3        WAVE-MEASUREMENT wave height dimension - The height of a
                   wave measured from trough to crest.

                   MIN: 000
                   MAX: 500
                   UNITS: Meters
                   SCALING FACTOR:  10

                   DOM: A general domain comprised of the numeric characters
                   (0-9).  Missing  = 999.

FLD LEN:  2        WAVE-MEASUREMENT sea state code - The code that denotes the
                   roughness of the surface of the sea in terms of average wave
                   height.

              DOM: A specific domain comprised of the ASCII characters
              00:  Calm, glassy     - wave height = 0 meters
              01:  Calm, rippled    - wave height = 0    -  0.1 meters
              02:  Smooth, wavelets - wave height = 0.1  -  0.5 meters
              03:  Slight,          - wave height = 0.5  -  1.25 meters
              04:  Moderate         - wave height = 1.25 -  2.5 meters
              05:  Rough            - wave height = 2.5  -  4.0 meters
              06:  Very rough       - wave height = 4.0  -  6.0 meters
              07:  High             - wave height = 6.0  -  9.0 meters
              08:  Very high        - wave height = 9.0  - 14.0 meters
              09:  Phenomenal       - wave height =   over 14.0 meters
              99:  missing

FLD LEN:  3        WAVE-MEASUREMENT primary swell identifier - The identifier
                   that denotes the availability of primary swell data.

                   DOM:  A specific domain comprised of the characters in the
                   ASCII character set.
                                    39
```

UG1: An indicator of the occurrence of the following data
       items:

WAVE-MEASUREMENT primary swell period quantity
WAVE-MEASUREMENT primary swell height dimension
WAVE-MEASUREMENT primary swell direction angle

FLD LEN: 2   WAVE-MEASUREMENT primary swell period quantity - The
                  quantity of time required for two successive primary swell
                  wave crests to pass a fixed point.

                  MIN: 00
                  MAX: 14
                  UNITS: Seconds
                  SCALING FACTOR: 1

                  DOM: A general domain comprised of the numeric characters
                  (0-9). Missing = 99.

FLD LEN: 3   WAVE-MEASUREMENT primary swell height dimension - The height
                  of a primary swell wave measured from the trough to the
                  crest.

                  MIN: 000
                  MAX: 500
                  UNITS: Meters
                  SCALING FACTOR: 10

                  DOM: A general domain comprised of the numeric characters
                  (0-9). Missing = 999.

FLD LEN: 3   WAVE-MEASUREMENT primary swell direction angle - The angle
                  measured clockwise from true north to the direction from
                  which primary swell waves are coming.

                  MIN: 001
                  MAX: 360
                  UNITS: Angular Degrees
                  SCALING FACTOR: 1

                  DOM: A general domain comprised of the numeric characters
                  (0-9). Missing = 999.

FLD LEN: 3   WAVE-MEASUREMENT secondary swell identifier - An indicator
                  that denotes the start of a WAVE-MEASUREMENT secondary swell
                  group.

                  DOM: A specific domain comprised of the characters in the
                  ASCII character set.

                  Domain Value ID: Domain Value Definition Text
                  UG2: An indicator of the occurrence of the following data
                         items:
                  WAVE-MEASUREMENT secondary swell period quantity
                  WAVE-MEASUREMENT secondary swell height dimension
                  WAVE-MEASUREMENT secondary swell direction angle

FLD LEN: 2   WAVE-MEASUREMENT secondary swell period quantity - The
                  quantity of time required for two successive secondary swell

40

wave crests to pass a fixed point.

MIN: 00
MAX: 14
UNITS: Seconds
SCALING FACTOR: 1

DOM: A general domain comprised of the numeric characters
(0-9). Missing = 99.

FLD LEN: 3   WAVE-MEASUREMENT secondary swell height dimension - The
                   height of a secondary swell wave measured from the trough to
                   the crest.

                   MIN: 000
                   MAX: 500
                   UNITS: Meters
                   SCALING FACTOR: 10

                   DOM: A general domain comprised of the numeric characters
                   (0-9). Missing = 999.

FLD LEN: 3   WAVE-MEASUREMENT secondary swell direction angle - The angle
                   measured clockwise from true north to the direction from
                   which secondary swell waves are coming.

                   MIN: 001
                   MAX: 360
                   UNITS: Angular Degrees
                   SCALING FACTOR: 1

                   DOM: A general domain comprised of the numeric characters
                   (0-9). Missing = 999.

FLD LEN: 3   PLATFORM-ICE-ACCRETION identifier - The identifier that
                   denotes the availability of PLATFORM-ICE-ACCRETION data.

                   DOM: A specific domain comprised of the characters in the
                   ASCII character set.

                   WA1: An indicator of the occurrence of the following data
                        items:
                        PLATFORM-ICE-ACCRETION source code
                        PLATFORM-ICE-ACCRETION thickness dimension
                        PLATFORM-ICE-ACCRETION tendency code

FLD LEN: 1   PLATFORM-ICE-ACCRETION source code - The code that denotes
                   the source of the ice that builds up on a marine platform's
                   structure.

                   DOM: A specific domain composed of the following qualitative
                   data values:

                   Domain Value ID: Domain Value Definition Text
                   1: Icing from ocean spray
                   2: Icing from fog
                   3: Icing from spray and fog
                   4: Icing from rain
                   5: Icing from spray and rain
                   9: Missing

```
FLD LEN: 3          PLATFORM-ICE-ACCRETION thickness dimension - The thickness
                    of the ice that has accumulated on a marine platform.

                    MIN:  000
                    MAX:  998
                    UNITS:  centimeters
                    SCALING FACTOR:  10

                    DOM: A specific domain composed of the integer values (0 -
                    9). 999 = missing


FLD LEN: 1          PLATFORM-ICE-ACCRETION tendency code - The code that denotes
                    the rate of change of ice thickness on a marine platform.

                    DOM: A specific domain composed of the following qualitative
                    data values:

                    Domain Value ID: Domain Value Definition Text
                    0: Ice not building up
                    1: Ice building up slowly
                    2: Ice building up rapidly
                    3: Ice melting or breaking up slowly
                    4: Ice melting or breaking up rapidly
                    9: Missing


FLD LEN: 3          WATER-SURFACE-ICE-HISTORICAL-OBSERVATION identifier - The
                    identifier that denotes the availability of a WATER-SURFACE-
                    ICE-HISTORICAL-OBSERVATION.

                    DOM:  A specific domain comprised of the characters in the
                    ASCII character set.

                    WG1:  An indicator of the occurrence of the following data
                          item:
                    OCEAN-ICE-OBSERVATION edge bearing code
                    WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge distance
                    dimension
                    WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge orientation
                    code
                    WATER-SURFACE-ICE-HISTORICAL-OBSERVATION formation type code
                    WATER-SURFACE-ICE-HISTORICAL-OBSERVATION navigation effect
                    code


FLD LEN: 2          OCEAN-ICE-OBSERVATION edge bearing code - The code that
                    denotes the true bearing, measured from the reporting
                    platform to the closest point of the principle ice edge.

                    DOM: A specific domain composed of the following qualitative
                          data values:

                    00: Ship in shore or flaw lead
                    01: Principal ice edge towards NE
                    02: Principal ice edge towards E
                    03: Principal ice edge towards SE
                    04: Principal ice edge towards S
                    05: Principal ice edge towards SW
                    06: Principal ice edge towards W
                    07: Principal ice edge towards NW
                    08: Principal ice edge towards N
```

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              09: Not determined (ship in ice)
              10: Unable to report, because of darkness, lack of
                  visibility or because only ice of land origin is visible
              99: missing

    COMMENT:  1. If more than one ice edge can be stated, the nearest or
                 most important shall be reported
              2. The bearing shall refer to the true and not to the magnetic
                 north


FLD LEN:  2       WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge distance
                  dimension - The distance from the reporting ship's location
                  to the nearest point on the ice edge.

                  MIN:  00
                  MAX:  98
                  UNITS: Kilometers

                  DOM:  A general domain comprised of the ASCII characters 0-9
                  99 = missing


FLD LEN:  2       WATER-SURFACE-ICE-HISTORICAL-OBSERVATION edge orientation
                  code - The code that denotes the orientation of the
                  principle ice edge and the direction relative to which the
                  ice lies.

    DOM:  A specific domain comprised of the ASCII characters
    00: ORIENTATION OF ICE EDGE IMPOSSIBLE TO ESTIMATE--SHIP OUTSIDE THE ICE
    01: ICE EDGE LYING IN A DIRECTION NE TO SW WITH ICE SITUATED TO THE NW
    02: ICE EDGE LYING IN A DIRECTION  E TO  W WITH ICE SITUATED TO THE N
    03: ICE EDGE LYING IN A DIRECTION SE TO NW WITH ICE SITUATED TO THE NE
    04: ICE EDGE LYING IN A DIRECTION  S TO  N WITH ICE SITUATED TO THE E
    05: ICE EDGE LYING IN A DIRECTION SW TO NE WITH ICE SITUATED TO THE SE
    06: ICE EDGE LYING IN A DIRECTION  W TO  E WITH ICE SITUATED TO THE S
    07: ICE EDGE LYING IN A DIRECTION NW TO SE WITH ICE SITUATED TO THE SW
    08: ICE EDGE LYING IN A DIRECTION  N TO  S WITH ICE SITUATED TO THE W
    09: ORIENTATION OF ICE EDGE IMPOSSIBLE TO ESTIMATE--SHIP INSIDE THE ICE
    99: Missing


FLD LEN:  2       WATER-SURFACE-ICE-HISTORICAL-OBSERVATION formation type code
                  - The code that denotes the type of ice formation reported
                  in the WATER-SURFACE-ICE-HISTORICAL-OBSERVATION.

                  DOM:  A specific domain comprised of the ASCII characters
                  00: NO ICE (0 MAY BE USED TO REPORT ICE BLINK AND THEN A
                      DIRECTION MUST BE REPORTED)
                  01: NEW ICE
                  02: FAST ICE
                  03: PACK-ICE/DRIFT-ICE
                  04: PACKED (COMPACT) SLUSH OR SLUDGE
                  05: SHORE LEAD
                  06: HEAVY FAST ICE
                  07: HEAVY PACK-ICE/DRIFT-ICE
                  08: HUMMOCKED ICE
                  09: ICEBERGS-ICEBERGS CAN BE REPORTED IN PLAIN LANGUAGE
                  99: Missing


FLD LEN:  2       WATER-SURFACE-ICE-HISTORICAL-OBSERVATION navigation effect
                  code - The code that denotes the effect of ice on
                  navigation.
```

DOM: A specific domain comprised of the ASCII characters
                    00: NAVIGATION UNOBSTRUCTED
                    01: NAVIGATION UNOBSTRUCTED FOR STEAMERS, DIFFICULT FOR
                        SAILING SHIPS
                    02: NAVIGATION DIFFICULT FOR LOW-POWERED STEAMERS, CLOSED TO
                        SAILING SHIPS
                    03: NAVIGATION POSSIBLE ONLY FOR POWERFUL STEAMERS
                    04: NAVIGATION POSSILBE ONLY FOR STEAMERS CONSTRUCTED TO
                            WITHSTAND
           ICE PRESSURE
                    05: NAVIGATION POSSIBLE WITH THE ASSISTANCE OF ICE-BREAKERS
                    06: CHANNEL OPEN IN THE SOLID ICE
                    07: NAVIGATION TEMPORARILY CLOSED
                    08: NAVIGATION CLOSED
                    09: NAVIGATION CONDITIONS UNKNOWN, E.G. OWING TO BAD WEATHER
                    99: Missing

   FLD LEN: 3   WATER-SURFACE-ICE-OBSERVATION identifier - The identifier
                      that denotes the availability of a WATER-SURFACE-ICE-
                      OBSERVATION.

                      DOM: A specific domain comprised of the characters in the
                      ASCII character set.
                      WD1: An indicator of the occurrence of the following data
                          item:

                      OCEAN-ICE-OBSERVATION edge bearing code
                      WATER-SURFACE-ICE-OBSERVATION uniform concentration rate
                      WATER-SURFACE-ICE-OBSERVATION non-uniform concentration code
                      WATER-SURFACE-ICE-OBSERVATION ship relative position code
                      WATER-SURFACE-ICE-OBSERVATION ship penetrability code
                      WATER-SURFACE-ICE-OBSERVATION ice trend code
                      WATER-SURFACE-ICE-OBSERVATION development code
                      WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit presence
                      code
                      WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit quantity
                      WATER-SURFACE-ICE-OBSERVATION iceberg quantity

   FLD LEN: 2   OCEAN-ICE-OBSERVATION edge bearing code - The code that
                      denotes the true bearing, measured from the reporting
                      platform to the closest point of the principle ice edge.

                      DOM: A specific domain composed of the following qualitative
                      data values:

                      00: Ship in shore or flaw lead
                      01: Principal ice edge towards NE
                      02: Principal ice edge towards E
                      03: Principal ice edge towards SE
                      04: Principal ice edge towards S
                      05: Principal ice edge towards SW
                      06: Principal ice edge towards W
                      07: Principal ice edge towards NW
                      08: Principal ice edge towards N
                      09: Not determined (ship in ice)
                      10: Unable to report, because of darkness, lack of
                          visibility or because only ice of land origin is visible
                      99: Missing

COMMENT: 1. If more than one ice edge can be stated, the nearest or most
             important shall be reported
          2. The bearing shall refer to the true and not to the magnetic
             north

FLD LEN: 3   WATER-SURFACE-ICE-OBSERVATION uniform concentration rate –
                  The percent concentration (surface coverage) of ice on the
                  water surface.

                  MIN: 000
                  MAX: 100
                  UNITS: percent

                  DOM: A general domain comprised of the ASCII characters 0-
                  9. 999= Missing

FLD LEN: 2   WATER-SURFACE-ICE-OBSERVATION non-uniform concentration code
                  The code that denotes the coverage arrangement of non-
                  uniformly distributed ice.

                  DOM: A specific domain comprised of the characters in the
                  ASCII character set.

                  06: Strips and patches of pack ice with open water between
                  07: Strips and patches of close or very close pack ice with
                      areas of lesser concentration between.
                  08: Fast ice with open water, very open or open pack ice to
                      seaward of the ice boundary.
                  09: Fast ice with close or very close pack ice to seaward of
                      the ice boundary.
                  99: Unable to report, because of darkness, lack of
                      visibility, or because ship is more than 0.5 nautical
                      mile away from ice edge.

FLD LEN: 1   WATER-SURFACE-ICE-OBSERVATION ship relative position code –
                  The code that denotes the relative position of the reporting
                  ship to the ice formation.

                  DOM: A specific domain comprised of the ASCII characters

                  0: SHIP IN OPEN WATER WITH FLOATING ICE IN SIGHT
                  1: IN OPEN LEAD OR FAST ICE
                  2: IN ICE OR WITHIN 0.5 NAUTICAL MILES OF ICE EDGE
                  9: Missing

FLD LEN: 1   WATER-SURFACE-ICE-OBSERVATION ship penetrability code – The
                  code that denotes the degree of ease with which the
                  reporting ship can proceed through the ice..

                  DOM: A specific domain comprised of the ASCII characters.

                  1: EASY
                  2: DIFFICULT
                  3: BESET (SURROUNDED SO CLOSELY BY SEA ICE THAT STEERING
                     CONTROL IS LOST.)
                  9: Missing

FLD LEN: 1   WATER-SURFACE-ICE-OBSERVATION ice trend code - The code that
                  denotes the trend of ice conditions.

DOM: A specific domain comprised of the ASCII characters.
1: CONDITIONS IMPROVING
2: CONDITIONS STATIC
3: CONDITIONS WORSENING
4: CONDITIONS WORSENING; ICE FORMING AND FLOES FREEZING
   TOGETHER
5: CONDITIONS WORSENING; ICE UNDER SLIGHT PRESSURE
6: CONDITIONS WORSENING; ICE UNDER MODERATE OR SEVERE
   PRESSURE
9: Missing

FLD LEN: 2   WATER-SURFACE-ICE-OBSERVATION development code - The code
that denotes the development stage of the ice.

DOM: A specific domain comprised of the ASCII characters
00: NEW ICE ONLY (FRAZIL ICE, GREASE ICE, SLUSH, SLUGS)
01: NILAS OR ICE RIND, LESS THAN 10 CM THICK
02: YOUNG ICE (GREY ICE, GREY-WHITE ICE), 10 - 30 CM THICK
03: PREDOMINANTLY NEW AND/OR YOUNG ICE WITH SOME FIRST YEAR
   ICE
04: PREDOMINANTLY THIN FIRST YEAR ICE WITH SOME NEW AND/OR
   YOUNG ICE
05: ALL THIN FIRST YEAR ICE (30 - 70 CM THICK)
06: PREDOMINANTLY MEDIUM FIRST YEAR ICE (70 - 120 CM THICK)
   AND THICK FIRST YEAR ICE (> 120 CM THICK) WITH SOME
   THINNER (YOUNGER) FIRST YEAR ICE
07: ALL MEDIUM AND THICK FIRST YEAR ICE
08: PREDOMINANTLY MEDIUM AND THICK FIRST YEAR ICE WITH SOME
   OLD ICE (USUALLY MORE THAN 2 M THICK)
09: PREDOMINANTLY OLD ICE
99: UNABLE TO REPORT, BECAUSE OF DARKNESS, LACK OF
   VISIBILITY OR BECAUSE ONLY ICE OF LAND ORIGIN IS VISIBLE
   OR BECAUSE SHIP IS MORE THAN .5 NM AWAY FROM ICE

FLD LEN: 1   WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit presence
code - The code that denotes the existence of growlers
and/or bergy bits.

DOM: A specific domain comprised of the ASCII characters
0: NOT PRESENT
1: PRESENT
2: UNKNOWN

FLD LEN: 3   WATER-SURFACE-ICE-OBSERVATION growler-bergy-bit quantity –
The quantity of growlers and bergy bits observed in the
area.

MIN: 000
MAX: 998

DOM: A general domain comprised of the ASCII characters 0-
9. 999 = Missing

FLD LEN: 3   WATER-SURFACE-ICE-OBSERVATION iceberg quantity - The
quantity of icebergs observed in the area.

MIN: 000
MAX: 998

DOM: A general domain comprised of the ASCII characters 0-

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                  9.  999 = Missing

***************************************************************************
                         Remarks Data Section
***************************************************************************

FLD LEN   3        GEOPHYSICAL-POINT-OBSERVATION remarks identifier – The
                   identifier that denotes the beginning of the remarks data
                   section.

                   DOM: A specific domain comprised of the ASCII character set.
                   REM = Remarks Data Section

FLD LEN: 3         GEOPHYSICAL-POINT-OBSERVATION remark identifier – An
                   indicator of the type of surface remarks data contained in
                   the GEOPHYSICAL-POINT-OBSERVATION-REMARK text.

                   DOM: A specific domain composed of the following qualitative
                        data values.

                   Domain Value ID: Domain Value Definition Text
                   SYN : Synoptic Remarks
                   AWY : Airways Remarks
                   MET : Metar Remarks

                   Indicate the occurrence of the following data items:
                   GEOPHYSICAL-POINT-OBSERVATION remark length quantity
                   GEOPHYSICAL-POINT-OBSERVATION remark text

FLD LEN: 3         GEOPHYSICAL-POINT-OBSERVATION remark length quantity – A
                   quantity that indicates the length of a individual
                   GEOPHYSICAL-POINT-OBSERVATION-REMARK text.

                     MIN:   001
                     MAX:   250

                   DOM: A general domain composed of the ASCII characters (0-
                        9).

FLD LEN: 250       GEOPHYSICAL-POINT-OBSERVATION remark text – The text of a
                   GEOPHYSICAL-POINT-OBSERVATION-REMARK.

                   DOM:  A general domain comprised of the characters in the
                   ASCII character set.

***************************************************************************
                      Element Quality Data Section
***************************************************************************
FLD LEN   3        GEOPHYSICAL-POINT-OBSERVATION quality data identifier – The
                   identifier that denotes the beginning of the element quality
                   data section.

                   DOM: A specific domain comprised of the ASCII character set.
                   EQD = Element Quality Data

FLD LEN   3        ORIGINAL-OBSERVATION-ELEMENT-QUALITY identifier – The
                   identifier that denotes the existence of ORIGINAL-
                   OBSERVATION-ELEMENT-QUALITY data.

                   DOM: A specific domain comprised of the ASCII character set.
                                    47
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                      Q01 - Q99:  The following may be occur from 0 to 99 times.
                      ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text
                      ORIGINAL-OBSERVATION-ELEMENT-QUALITY reason code
                      ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code

FLD LEN   6           ORIGINAL-OBSERVATION-ELEMENT-QUALITY original value text -
                      The original value text for elements which were rejected or
                      recomputed during validation.

                      DOM:  A general domain comprised of the characters in the
                      ASCII character set.

FLD LEN   1           ORIGINAL-OBSERVATION-ELEMENT-QUALITY reason code - The code
                      that denotes the reason an element was identified as
                      suspect, erroneous or recomputed.

                      DOM:  A specific domain comprised of the characters in the
                      ASCII character set.

                      0 = ORIGINAL VALUE MISSING OR CORRUPTED
                      1 = GROSS ERROR CHECKS (RANGE AND/OR DOMAIN CHECK)
                      2 = GEOPHYSICAL CHECKS (CHECKING THE VALIDITY AGAINST OTHER
                          PARAMETERS)
                      3 = CONSISTENCY CHECKS (CHECKING THE VALIDITY AGAINST THE
                          SAME TYPE OF PARAMETER)
                      4 = GROSS ERROR CHECKS AND GEOPHYSICAL CHECKS
                      5 = GROSS ERROR CHECKS AND CONSISTENCY CHECKS
                      6 = GEOPHYSICAL CHECKS AND CONSISTENCY CHECKS
                      7 = GROSS ERROR CHECKS AND GEOPHYSICAL CHECKS AND
                          CONSISTENCY CHECKS

FLD LEN   6           ORIGINAL-OBSERVATION-ELEMENT-QUALITY parameter code - The
                      code that denotes the type of parameter that the
                      supplemental-level-element-quality applies to.

                      DOM:   a specific domain comprised of the characters in the
                      ASCII character set.
Comment Text:
APC3   : ATMOSPHERIC-PRESSURE-CHANGE THREE HOUR CHANGE QUANTITY
ATOLD  : AIR-TEMPERATURE-OBSERVATION-LEVEL DEWPOINT TEMPERATURE
WOSPD  : WIND-OBSERVATION SPEED RATE
WOLSPD : WIND-OBSERVATION-LEVEL SPEED RATE
WOLDIR : WIND-OBSERVATION-LEVEL DIRECTION ANGLE
WODIR  : WIND-OBSERVATION DIRECTION ANGLE
ATOLDS : AIR-TEMPERATURE-OBSERVATION-LEVEL DENSITY RATE
ATOLT  : AIR-TEMPERATURE-OBSERVATION-LEVEL AIR TEMPERATURE
ATOD   : AIR-TEMPERATURE-OBSERVATION DEW POINT TEMPERATURE
ATOT   : AIR-TEMPERATURE-OBSERVATION AIR TEMPERATURE
APOSP  : ATMOSPHERIC-PRESSURE-OBSERVATION STATION PRESSURE RATE
APOSLP : ATMOSPHERIC-PRESSURE-OBSERVATION SEA LEVEL PRESSURE
APOLP  : ATMOSPHERIC-PRESSURE-OBSERVATION-LEVEL PRESSURE RATE
APOLH  : ATMOSPHERIC-PRESSURE-OBSERVATION-LEVEL HEIGHT DIMENSION
APOA   : ATMOSPHERIC-PRESSURE-OBSERVATION ALTIMETER RATE
WGOSPD : WIND_GUST-OBSERVATION SPEED RATE
APCQ24 : ATMOSPHERIC-PRESSURE-CHANGE TWENTY FOUR HOUR QUANTITY
APCTEN : ATMOSPHERIC-PRESSURE-CHANGE TENDENCY CODE
PRSWOA : PRESENT-WEATHER-OBSERVATION AUTOMATED ATMOSPHERIC CONDITION CODE
PRSWM1 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PRSWM2 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
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PRSWM3 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PRSWM4 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PRSWM5 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PRSWM6 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PRSWM7 : PRESENT-WEATHER-OBSERVATION MANUAL    ATMOSPHERIC CONDITION CODE
PSTWA1 : PAST-WEATHER-OBSERVATION    AUTOMATED ATMOSPHERIC CONDITION CODE
PSTWA2 : PAST-WEATHER-OBSERVATION    AUTOMATED ATMOSPHERIC CONDITION CODE
PSTWM1 : PAST-WEATHER-OBSERVATION    MANUAL    ATMOSPHERIC CONDITION CODE
PSTWM2 : PAST-WEATHER-OBSERVATION    MANUAL    ATMOSPHERIC CONDITION CODE
PSTWOP : PAST-WEATHER-OBSERVATION PERIOD QUANTITY
SCOCIG : SKY-CONDITION-OBSERVATION CEILING HEIGHT DIMENSION
SCOHCG : SKY-CONDITION-OBSERVATION HIGH CLOUD GENUS CODE
SCOLCB : SKY-CONDITION-OBSERVATION LOWEST CLOUD BASE HEIGHT DIMENSION
SCOLCG : SKY-CONDITION-OBSERVATION LOW CLOUD GENUS CODE
SCOMCG : SKY-CONDITION-OBSERVATION MID CLOUD GENUS CODE
SCOTCV : SKY-CONDITION-OBSERVATION TOTAL COVERAGE CODE
SCOTLC : SKY-CONDITION-OBSERVATION TOTAL LOWEST CLOUD COVER CODE
VODIS  : VISIBILITY-OBSERVATION DISTANCE DIMENSION
VOVAR  : VISIBILITY-OBSRVATION VARIABILITY CODE
```

7.   **Start Date:**

Currently, the 1920's but the date will vary by station.

8.   **Stop Date: Present**

9.   **Coverage:**

   a.   Southernmost Latitude: 9000S
   b.   Northernmost Latitude: 9000N
   c.   Westernmost Longitude: 18000W
   d.   Easternmost Longitude: 18000E

10. **Location:** Global

11. **Keywords:**

  a. Temperature
      b.   Dew Point
      c.   Wind Speed
      d.   Wind Gust
      e.   Wind Direction
      f.   Ceiling
      g.   Sky Cover
      h.   Cloud Layer Data
      i.   Visibility
      j.   Present Weather
      k.   Past Weather
      l.   Sea Level Pressure
      m.   Altimeter Setting
      n.   Station Pressure
      o.   3-hour Pressure Change
      p.   Precipitation Amount
      q.   Snowfall
      r.   Snow Depth
      s.   Maximum Temperature
      t.   Minimum Temperature
      u.   US Air Force
      v.   Clouds

```
        w.    Surface

12.   How to Order Data:

      Order from:
      National Climatic Data Center
      Climate Services Branch
      Federal Building
      151 Patton Avenue
      Asheville, NC 28801-5001
      phone:  (828) 271-4800
      email:  orders@ncdc.noaa.gov

13.   Archiving Data Center:

      Air Force Combat Climatology Center (AFCCC)
      Federal Building
      151 Patton Avenue
      Asheville, NC 28801-5001

14.   Technical Contact:

      National Climatic Data Center
      Climate Services Branch
      Federal Building
      151 Patton Avenue
      Asheville, NC 28801-5001
      phone:  (828) 271-4800
      email:  questions@ncdc.noaa.gov

15.   Known Uncorrected Problems:

      Minimal number of random errors, decode errors, and reporting
      errors (by station)--less than .1% of observations affected overall.
      Most errors corrected/eliminated by quality control software.

16.   Quality Statement:

      Data have undergone extensive automated quality control, and additional
      manual quality control for US Air Force stations.

17.   Revision Date:

      March 17, 1999 - correct block length

18.   Source Data Sets:

      DATSAV2

19.   Essential Companion Data Sets:

20.   Derived Data Sets:

21.   References:

22.   Summary:

      The DATSAV3 database is built from DATSAV2.  The DATSAV2 Surface
      Database is composed of worldwide surface weather observations from
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about 10,000 currently active stations, collected and stored from
sources such as the Automated Weather Network (AWN) and the Global
Telecommunications System (GTS). Most collected observations are
decoded at the Air Force Global Weather Central (AFGWC) at Offutt AFB,
Nebraska, and then sent electronically to the USAF Combat Climatology
Center (AFCCC), collocated with NCDC in the Federal Climate Complex in
Asheville, NC. AFCCC builds the final database through decode,
validation, and quality control software. All data are stored in a
single ASCII format. The database is used in climatological
applications by numerous DoD and civilian customers.

DATSAV2 refers to the digital tape format in which decoded weather
observations are stored. The DATSAV2 format conforms to Federal
Information Processing Standards (FIPS). The DATSAV2 database includes
data originating from various codes such as synoptic, airways, METAR
(Meteorological Routine Weather Report), and SMARS (Supplementary Marine
Reporting Station), as well as observations from automatic weather
stations. The users handbook provides complete documentation for the
database and its format.

AFCCC sorts the observations into station-date-time order, validates
each station number against the Air Weather Service Master Station
Catalog (AWSMSC), runs several quality control programs, and then merges
and sorts the data further into monthly and yearly station-ordered
files. AFCCC then provides the data to the collocated National Climatic
Data Center (NCDC).